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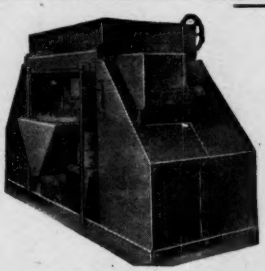

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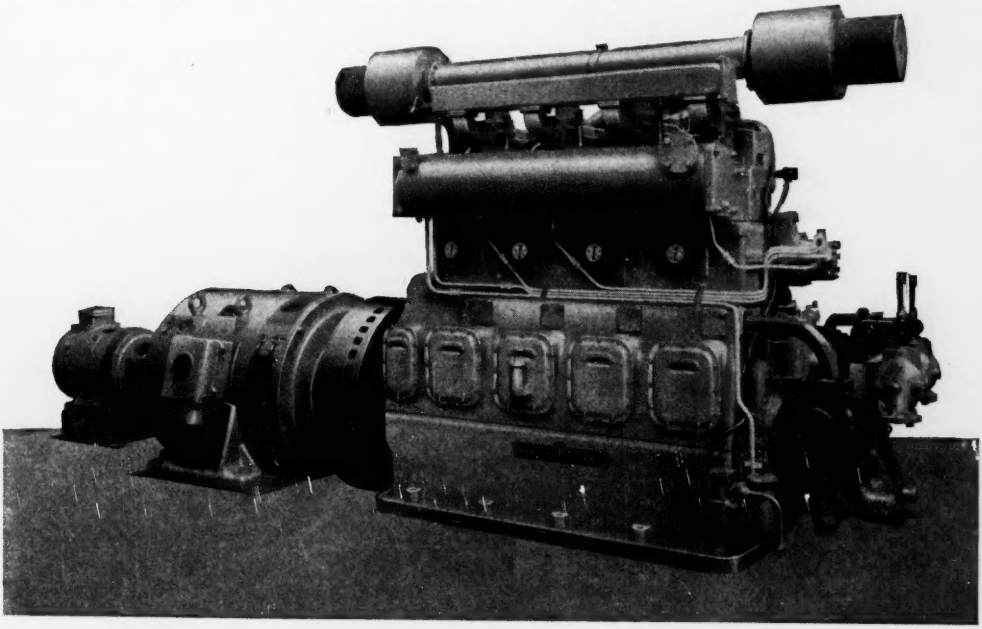

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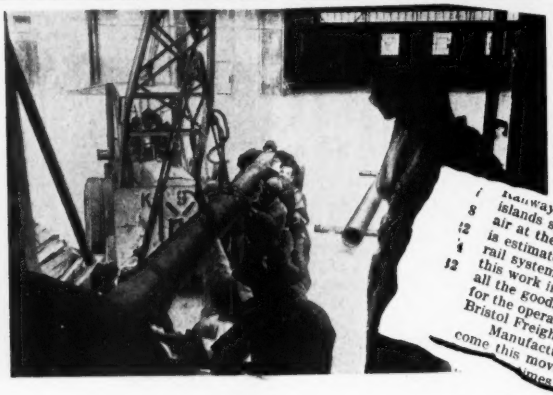

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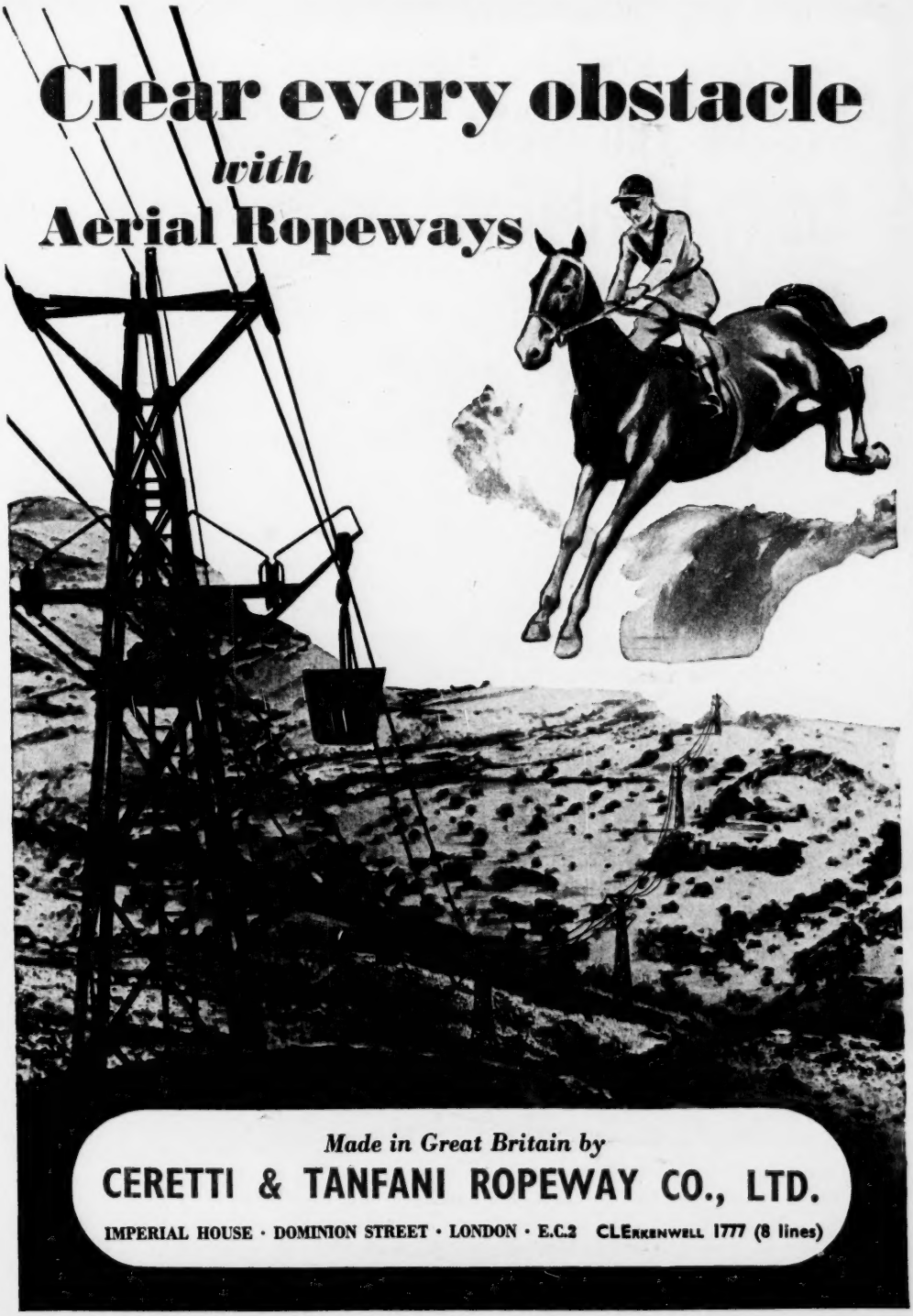

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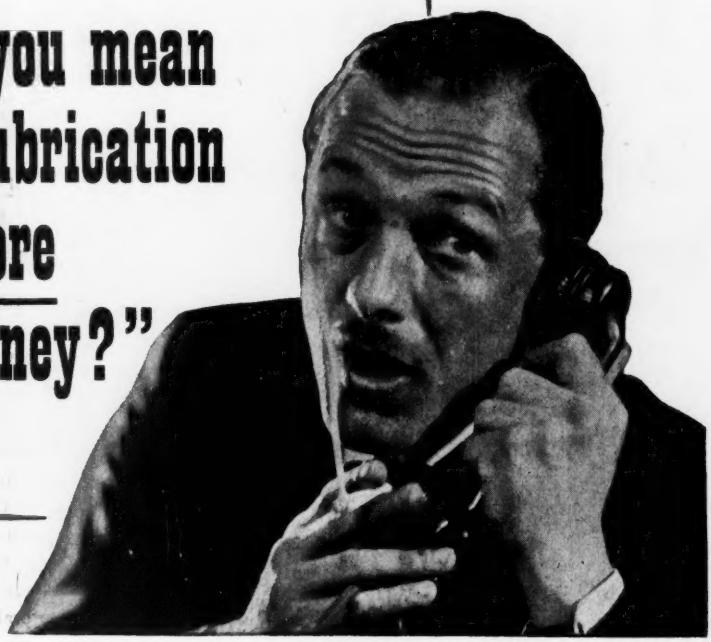

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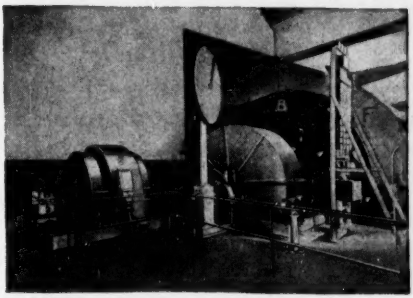

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The Mining Journal

Established 1835

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CONTENTS

Notes and Comments 335
From Our Cornish Correspondent 337
Incorporating Scrap in Ore Smelting Processes 338
Mining in Turkey in 1950 339
A Commonwealth Bank Merger 341
Machinery and Equipment 342
New Consolidated Pneumatic Air Compressors; Rapier Excavators; Universal Shearing Machine for Mechanized Anthracite Mining; Acomb Switches for Belt Conveyors; Gandy Products; The Klinger Book of Jointings.
Metals, Minerals and Alloys 344
The Mining Markets 346
Inco's Good Progress 347
Company News and Views 347
I.M.F. Retreats; Kamunting's Profit Expansion.
Company Shorts 348
Topical News in Brief 348
Company Meetings and Reports 349
Kinta Kellas Tin Dredging; Anglo American Corporation of South Africa.
Mining Men and Matters 349

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NOTES AND COMMENTS

Commonwealth Supply Talks End

The meeting of Commonwealth Ministers concerned with the supply and production of raw materials ended on Thursday of last week. The purpose of the meeting was to exchange views and ideas on the production and exchange of both raw materials and manufactured goods that faced the whole Commonwealth, and thus it comes as no surprise that the main conclusions of the talks were cast in the form of a general agreement on the need for measures to ensure the continuous development of supplies of raw materials; to maintain the free flow of exports and capital goods and other essential manufactures; to secure a reasonable stability in price levels to avoid inflation; and to increase supplies of capital goods and equipment from the U.K. to Commonwealth countries.

According to official disclosures several of the Commonwealth members expressed their intentions of raising production of specific raw materials which the conference discussed individually. Canada proposed to produce more iron and non-ferrous metals, and to divert extra supplies of copper to this country. Australia planned to increase her output of copper, lead, zinc, steel and aluminium; while New Zealand intended to produce more pulp, timber and newsprint. Southern Rhodesia planned to concentrate on raising the efficiency of her transportation system and on coal production, which would in turn redound favourably on the production of copper, chrome, asbestos and tungsten. India, Mr. Stokes said, would increase her production of iron, pig iron and steel. While Pakistan would attempt to raise her output of sulphur, manganese and cotton, although the availability of larger supplies of the latter depended on the supplies of fertilizer available—the production of which Ceylon proposed to increase, along with rubber.

Mr. Stokes, commenting on Colonial production, said that the achievement of the Colonies had been in the maintenance of their tin and rubber output despite the situation prevailing in Malaya. Increases in the production of nickel in Tanganyika and copper and sulphur in Uganda, were also mentioned, though as far as we are aware, production in these cases has yet to be initiated.

Mr. Stokes stressed once more that the conference was not concerned with the fixing of prices but it was generally accepted that to avoid inflation, reasonable price stability was necessary, not only in the prices of raw materials but in manufactured goods as well. His view was that many of the difficulties of the past year had arisen from the smash and grab tactics in the commodity markets which could be avoided by more orderly buying. On this point, the Pakistan representative reserved the position of his delegation.

The conference recognized that without the provision of capital equipment no early increases in the output of raw materials could be obtained, and it was agreed that arrangements should be made for the practical measures necessary for these developments to be pursued in discussion between individual countries. Arrangements were also agreed upon for the fuller exchange of information and for facilitating deliveries of U.K. exports to Commonwealth countries.

In a world motivated by fear and anxiety there is a strong tendency to write down the value of conferences, international or Commonwealth, if no "answers" to the world's problems are forthcoming. This stricture may well apply to this conference, especially as it would be generally conceded that Commonwealth members have only proposed plans which they would have taken in any case. But, on the other hand, it should be recorded that there is a good deal to be said for bringing together responsible members of the Commonwealth countries to discuss their own particular problems; to give their interpretation of other members' difficulties; and to obtain a proper perspective of the urgent need for increasing the production of raw materials to maintain the armament drive and at the same time to raise industrial production commensurate with higher standards of living. One point that is clear is that the common problems facing the Commonwealth countries demand for their solution closer co-operation which in the long run must go a long way to ensuring a more satisfactory distribution of the raw materials necessary for their well-being.

The International Tin Meeting

The sixth regular session of the International Tin Study Group finished in Rome on Friday last having extended over five days—the time originally allocated, though, later a longer session was prophesied. The results, so far as they are disclosed in the official communiqué which follows, were entirely negative as was to be expected if the United States policy of bearing tin remained unchanged. At the conclusion of the meeting the following agreed communiqué was issued:

"The Study Group discussed the problem of international co-operation, both long-term and short-term. The discussion also covered prices, including the question of non-discrimination in prices, and restrictions on the consumption of tin. The Group also considered its future functions and work. In the course of the discussions, the tin-producing countries denied that any international cartel exists in the production and marketing of tin. The report of the statistical committee of the Group estimated mine production for 1951 at 168,000 long tons (including 31,000 tons from Indonesia) and for 1952 at 139,500 tons (excluding Indonesia which did not make a forecast for 1952). These estimates assumed only production from plant and equipment already in operation, under rehabilitation and under commitment: they assumed the existence of conditions conducive to full employment: and they assumed also that political and social stability and social stability in the main producing countries would permit continuity of operations. On the other side, the Committee estimated consumption for 1951 at 147,000 long tons and for 1952 at 154,000 long tons, not taking into account purchases for non-commercial stocks. These consumption estimates were also based on certain assumptions—the maintenance of full industrial activity in all consuming countries: the availability of the necessary foreign exchange for the purchase of full requirements of tin: and no restrictions on the use of tin except in the U.S.A.

"Representatives of producing countries expressed no concern at the excess of production over consumption shown in the estimates. Even without resumption of purchasing for the American stockpile, which the Reconstruction Finance Corporation suspended in March, these representatives considered that reserve stocking by other countries would more than absorb the difference. The representatives of these countries appeared to have received no indication from the American delegates as to the likelihood of a resumption of stockpile buying.

"It was understood that current American consumption, without additions to the stockpile, was estimated at 62,000 tons. Supplies reaching America under bilateral contracts with Bolivia, Indonesia and the Belgian Congo were estimated by these representatives at not more than 25,000 tons. It was therefore calculated that unless the Americans were prepared to dig into their stockpile (variously estimated at anywhere between 150,000 and 200,000 tons) they would soon have to resume purchases on the international market.

"Some delegates considered that the forthcoming American visit to Malaya would probably smooth the way towards United States re-entry into the market by eliminating what they described as the primarily political objections of the Reconstruction Finance Corporation to the tin mining industry as a whole.

"Although it was believed that the American delegates gave no indication of what they considered a fair price for tin on the international market, some producers' representatives were openly canvassing a price of around £1,000 sterling a ton. This price, it was claimed, would maintain production at the level currently needed, guaranteeing the existence of present marginal producers.

"Considerable importance was attached to the current negotiations in Washington for renewal of the provisional contract between Bolivia and the United States. It was thought possible that the Americans might agree to increase the price of $1.12 paid under the current contract. The Bolivian delegate to the Study Group meeting was understood to have claimed that the new price should be $1.50. Representatives of other producing countries, as indicated in the communiqué, were understood to have combated vigorously the American argument that higher prices should be paid for Bolivian tin because it is relatively dear to mine. Some of these representatives indicated that they would invoke the non-discriminatory provisions of the General Agreement on Tariffs and Trade (GATT) to prevent differential prices."

Apart from the statement on the current position chief interest attaches to the speculation on the probable course which Indonesia and the Congo may adopt, and the extent to which the U.S. may be willing to go in the direction of trenching on their stockpile.

International Allocation of Copper and Zinc

The International Materials Conference published in Washington last week-end allocations of copper and zinc for the current quarter drawn up by their Copper-Zinc-Lead Committee, and which were immediately forwarded to all interested governments for immediate implementation. They cover the distribution of primary metal only and are as follows (in metric tons):

	Copper	*Zinc*
U.S.A.	333,770	228,460
U.K.	91,960	60,250
Germany	47,100	38,520
France	36,490	27,660
Canada	27,580	12,780
Italy	24,200	9,390
Belgium-Luxembourg Economic Union	16,480	23,160
Sweden	13,710	5,670
Japan	13,200	10,530
Australia	8,940	13,010
India	8,570	5,600
The Netherlands	6,800	5,850
Switzerland	5,570	2,250
Yugoslavia	4,950	1,900
South Africa	4,170	3,100
Spain	3,710	4,020
Denmark	3,530	1,500
Mexico	3,510	2,620
Norway	3,310	3,190
Brazil	3,090	1,940
Finland	2,430	1,020
Austria	2,370	1,750
Chile	2,310	1,020
Argentina	2,060	2,200

Twelve other countries are allowed less than 2,000 tonnes of copper each.

We trust our readers will pardon us if we confess to requiring a good deal of further elucidation before we can form an opinion of the practical results which may be expected from this international movement. The Central Group described the measures adopted as purely *ad hoc*, involving no commitments as to principles of distribution which committees may adopt for subsequent periods. The allocations are stated to constitute a "total entitlement of primary metal for consumption" or, in other words, the amount of primary metal which may be processed or consumed by each country, whether from domestic production or imports. It will be for each particular country to buy or sell within its allocation. Incidentally, U.K. consumption for the first six months of the year, as reported by the British Bureau of Non-Ferrous Metals Statistics, was 282,460 tons; obviously the U.K. allocation is much below this figure. As the allocation announcement was late, it may be necessary to make adjustments in subsequent periods. President Truman has now released 55,000 tons

of copper from the U.S. stockpile, and minor releases are apparently in progress in regard to zinc. Are these to be brought into hotch-pot or are they to be available to United States' consumers independently of allocations? The same considerations may apply on a much smaller scale to other countries.

No restrictions are mentioned in the communiqué as to the price which may be paid by countries which have to purchase abroad. In default of a general price, the complaint of United States importers that their ceilings do not permit them to compete with European purchasers seems unresolved. Already importers of lead and zinc there have stated that they will divert their purchases to countries offering a better price. In the case of Chile, exception is made as to 20 per cent of their output from large, and the whole of their output from small and medium mines, which they may dispose of outside the allocation programme at, presumably, their own price. This exception may tempt other countries to endeavour to obtain similar advantages. The principle on which the allocations have been made is a little difficult to understand without further elaboration. New Zealand is allowed 25 tonnes for the quarter, as compared with 170 tonnes to Formosa, and Peru 200 tonnes against 2,060 tonnes for Argentina. South Africa is allocated 4,170 tonnes, but the Rhodesias do not appear in the list. There are doubtless many other points which will occur to our readers, where further clarification seems necessary. It would be interesting also to know how this communiqué ties in with Mr. Stokes' disclosures to the Commonwealth Raw Materials Conference. The Bretton Woods scheme has now proved unworkable, and the present allocation scheme, seems to face even greater difficulties.

U.S. Galvanizing Industry

The chief difference between American and British hot-dip galvanizing practice is the over-riding preference, in the U.S., for hot sulphuric acid pickling, rather than for hydrochloric acid commonly used in the U.K. This is one of the main conclusions of the British specialist team which recently visited America to study American methods and techniques in the hot-dip galvanizing of fabricated products and castings and whose report, entitled "Hot Dip Galvanizing," has now been published by the Anglo-American Council of Productivity.

The team visited some twenty general galvanizing shops in the U.S. in September and October of last year and found that, although the best British plants were as modern and efficient as their American counterparts, the team was convinced that there were many British factories which could profit from a study of trans-atlantic production methods. This was particularly true in connection with the design and application of handling devices. All the galvanizing shops were very fully equipped with travelling gantries, monorail hoists or continuous conveyors, and the team thought that much ingenuity had been shown in designing automatic galvanizing equipment where the nature of the work permitted such methods, namely, for cylinders, malleable iron castings and buckets. In general, the team came to the conclusion that it was the greater mechanization together with the elimination, so far as possible, of heavy manual labour that contributed largely to the higher rate of productivity in America as compared with this country.

Technical processes in many of the plants visited would not stand comparison with modern British practice, but these were considered to be of secondary importance to the means to securing maximum output.

In addition to these more tangible factors affecting higher rate of productivity in America, there were also less tangible factors operating which were of considerable importance. Chief of these, states the Report, was probably the acceptance of the basic idea of what is so often proudly referred to as the "American way of life." This, the report has defined as a "constant striving for the ideal of a richer and fuller life for all, with opportunity for each according to his ability and personal attainments." Thus, the "American worker is not apprehensive of mechanization, but realizes that his wages ultimately depend on the firm's prosperity which, in turn, depends on its productivity."

The Report also discusses methods employed in recovering zinc from zinc ash; methods of costing; labour relations, and research in the U.S.A.

The Report can be obtained from the Anglo-American Council on Productivity, 21, Tothill Street, London, S.W.1. Price 3s. 3d. (post free).

Cornwall

(From Our Own Correspondent)

Penhawes, September 29

The high price of tin and tungsten has encouraged a number of speculators to turn their attention to Cornwall, although up to the present no large mining houses have taken any action and there is no doubt that the high level of taxation coupled with the recent dividend limitation edict is retarding interest in the more speculative investments such as mining.

Of the four operating mines Geevor has just shown an increased profit and development remains satisfactory. Provision is being made for a new winder and a new compressor house is under construction.

At South Crofty sinking continues on the complex lode in the Robinson's section and the winze is now about 40 ft. deep. At the New Cooks section driving still continues towards Roskear shaft and a number of branches of the great cross course in the Tuckingmill valley have been intersected.

It is reported that New Consols mine is now unwatered to the bottom level for the first time. At Castle-an-Dinas the boreholes put down to determine the granite contact shows that it is very steep indeed. In consequence it seems likely that further sinking and exploration at a greater depth will be considered.

A number of smaller companies have started operations, largely for re-treating old rock and tailing dumps, whilst the British Malayan Tin syndicate continues to mill at Basset mine. For some time this plant has been treating an accumulation of old sand residues, but it is understood that recently the plant has been turned over to treat the rock dumps.

NEW COMPANY TO WORK WHEAL PROSPER

A company, the New Wheal Prosper Ltd., has been formed to work the open pit known as Wheal Prosper and Michell about half a mile west of Lanivet church. The pit is about 800 yd. long, 30 yd. wide at the bottom and about 90 ft. deep being on a stockworks of tiny veins running E.7°N. containing quartz, gilbertite and cassiterite, in a soft and light coloured killas. At the 1876 working, Collins states that the grade did not then exceed 3 lb. per ton but it paid expenses. A small treatment plant has been erected recently. Beach sand from the Gwithian beach is now being treated by Mineral Recovery Ltd. in a new plant erected at Kieve mill, just North of Camborne, whilst a small concern is working residues at St. Agnes.

A company is also erecting a plant at Bissoe to treat material from the Carnon valley which contains very finely divided cassiterite.

A small quantity of wolfram is being produced as a by-product in a gravel washing undertaking on Bodmin moor and the Stanbear cot mine is being reopened.

In the St. Just district, the possibilities of opening up Wheal Bellan, near Cape Cornwall, are being investigated.

Incorporating Scrap in Ore Smelting Processes

By C. C. DOWNIE

In view of the desire to conserve metals as far as possible, particularly as prices have soared recently, some of the methods adopted by large refineries with regard to the incorporation of waste materials in the regular ore charges may be of interest. The amount of scrap which abounds from disused automobiles in the U.S.A. had reached such proportions some years before the late war, that this source claimed no small attention and has since developed still further. Competition between firms became acute in a manner unknown in this country, as the source afforded an alternative when regular ore parcels did not come to hand, and enters into what is known as "customs" smelting. The bidding for ores was thus to some extent influenced by large stocks of accumulated scrap materials. The metals mainly concerned were copper, lead, zinc, antimony, and, to a smaller extent, tin, from the radiators, batteries, and electrical parts, etc., of dismantled motor vehicles.

ARRANGEMENTS FOR INCORPORATING SCRAP

It might appear remarkable that these are given so much attention, but it has to be remembered that, in pre-war days, the city of New York alone claimed some 3,000,000 registered motor vehicles, *i.e.*, more than those registered in the entire U.K. Hence, this source, together with engineering works scrap and turnings, required a larger scale of handling than is possible in the smaller refining furnaces used here, and was thus more or less automatically tacked on to ore smelting, but the procedures adopted by different concerns vary appreciably. In one factory, a huge dump of car radiators has loads continually transported to a series of benches where oil burners are projected against them to melt out the solder as a preliminary operation; and which crude solder passes to the refining hearths, while the remaining brass goes to the copper furnaces. Batteries accumulate in such quantities that they are passed along a conveyor belt to a machine specially adapted for dealing with them. This comprises a stamp which descends on to each individual battery as it passes underneath and crushes the shell to pieces, while the antimonial lead is thrust together as a more or less solid block. As the battery contains acidulated water, together with lead peroxide, and some lead sulphate, this process has to be carried out over a tank of water. The individual blocks of antimonial lead are continuously picked out from the tank manually, while a perforated elevating arrangement scrapes the bottom to drag up the pieces of shell and dispose of them to a nearby dump. The sludge, comprising mainly lead peroxide and sulphate, is removed separately to the lead refining furnaces which deal with flue dusts, etc., as distinct from the hearths, which deal with the antimonial lead. This is done by periodically filtering the acidulated water in the tank, and comes to hand in the form of a fine sludge, but still containing particles of the broken shells. Briefly, the departments supplied are the solder refining furnaces, and regular copper furnaces, the antimonial lead pans, and the smeltery dealing with flue dusts.

The foregoing plant layout differs materially from those adopted by other concerns who charge all and sundry materials of the kind into huge lead furnaces, and copper converters as the regular matte is tapped from the associated blast furnace. By so doing, much of the zinc, lead, tin, and antimony contents in the latter instance, are volatilised, and pass to the electrostatic precipitators. As already described, this collected fume is dispatched to large lithopone factories, wherein it is digested in sulphuric acid to form zinc sulphate, and by mutual arrangement, the residual insoluble matter containing the lead, tin, and antimony is returned to the smeltery.

Both systems have their respective advantages. By segregating the products initially, although more labour is required, the lead, tin, and antimony are not dissipated so widely, and give a more immediate return. The combined system economizes in labour and is more direct, but despite this, takes longer before the metal values are ultimately obtained. When the blister copper is eventually electro-refined, the anode slimes are considerably greater, and justify melting to anode plates for the Betts electrolytic system.

A still further means of augmenting the metal from ore supplies is to melt down directly all brass materials, cast to anode plates, and electrolyze without application of the converter process at all. This is a complex system, and although carried out on an elaborate scale, necessitates constant attention to the electrolytic cells, as the electrolyte is always opaque due to the presence of excess tin, lead, and antimony, while zinc predominates in the clear liquor. As the melting-down of the scrap is done in oil-fired reverberatories, the volatile metals are less disposed to pass off, and hence appear in greater quantities in the electrolyte. The latter takes the form of a milky green solution despite its being continuously passed through a filter, as the oxides, particularly tin oxide, are insufficiently dense to settle properly.

Where the regular ore smelting process embraces nickel, a specialized electrolytic system is used for directly depositing nickel from various collected and melted-down cupro-nickel alloys, in place of the earlier method of first depositing copper, making provision for the iron, and ultimately depositing nickel.

Throughout this work, the promiscuous nature of the source of raw materials would more or less prohibit large-scale operation (as it does in this country) were it not for the regular normal ore supplies.

Each of the systems mentioned would require elaborate space to describe in detail, and the following is an abbreviated account of the first mentioned process wherein the materials are subjected to a preliminary segregation.

HANDLING SEGREGATED PRODUCTS

The collected solder pellets from radiators are first sprinkled with either fish oil or waste lubricant material, prior to pressing into solid blocks and thrusting under some of the already melted mass in order to minimize volatilization losses. A 10-ton oil-fired kettle suffices for this. The mass is first well stirred, skimmed, and the contents assayed, and should show some 20 to 25 per cent tin, and not less than 70 per cent lead. Where the antimony content does not exceed from 1½ to 2 per cent, the material is used for directly converting to plumbers' solder. More frequently it has picked-up antimony, with a content approaching 5 per cent and upwards, when it is subjected to the aluminium process, where 1 lb. of aluminium is added to every 2 lb. of antimony present, at 1,100°F., removing the antimony-aluminium dross, and steaming at from 1,100° to 1,200°F. The anode slimes from the electrolytic lead process contain from 30 to 35 per cent tin, and following reduction, are added where the tin content has fallen too low. About the only other rich source of tin is obtained by reducing out lead from poor tin-lead residues, with a minimum of coal from skimmings, when the tin largely remains behind, and by repeated oxidation and reduction, can be raised to more than 50 per cent, but if antimony is present, this tends to follow the tin.

Apart from this, antimonial lead material is added to tin-free litharge, with the heat raised sufficiently to melt the latter to a thin fluid condition, when lead is reduced out, and antimony collects in the skimmings. Where the

heat is sufficient to cause actual burning, the losses of antimony sustained can be considerable, but by repeated oxidation and reduction, crusts can be successfully taken off at from 16 to 18 per cent antimony.

The kettles used for this work are semi-spherical in shape, made of 1½ in. mild steel plate, with a diameter of 14 ft., and over 200 tons in capacity. Oil-firing is used in some American factories, as distinct from pulverized coal firing used here, while centrifugal pumps up to 4 in. in diameter, are used for transferring the molten contents from one kettle to another, as occasion demands. Stirring is performed continuously, using a three-bladed ship's form of propeller, driven by a specially wired motor, so that the speed of rotation can be altered as required without the need for extra gearing. Formerly, not a little antimonial lead accrued from old bullets, shrapnel, etc., where the former contained from 10 to 15 per cent antimony, and also old type metal, containing up to 20 per cent antimony.

In this country, prior to the war, antimonial lead was literally a drug on the market, but the American smelteries, having the advantage of existing ore sources, were thereby enabled to incorporate economically all such products, as a sound paying proposition. All associated type ashes, type drosses, type copper, and collected antimonial litharges, which were for many years thrown out as unwanted waste in this country, were fully utilized. As a matter of fact, it is no exaggeration to mention that some refiners here made a deduction from the price offered for lead contents, because of the presence of antimony.

DESILVERING

Although these scrap additions rarely introduce silver, the lead from the regular ore charges contains this metal, and hence after attending to tin and antimony, the lot is subjected to desilvering. (The patented Harris process for removing remaining antimony from the lead was abandoned in some factories, but the use of magnesium-calcium alloy to remove bismuth was persevered with.) Unlike the practice here of using pure zinc slabs for alloying with the silver, collected zinc-lead scrap from toy factories is taken advantage of, but the silver contents rarely exceed some 80 oz. per ton, and the treatment reduces this to 0.08 oz. per ton. This is much lower than practice here, which on the smaller tonnages handled is rarely reduced below 0.5 oz. per ton, using 40 lb. lots of zinc six or seven times on 3 ton charges. More than double this proportion of zinc is added in the form of zinc-lead scrap, but this excess zinc in the lead is reduced to 0.008 per cent by application of chlorine, using the Betterton process.

The collected lead peroxide and lead sulphate from scrapped batteries is passed to oil-fired reverberatory furnaces which normally deal with fume from the electrostatic precipitators, and to which is added a proportion of raw galena, and also coal slack, with a covering of slag—frequently slagged material removed from the flues. In one refinery, flue dust accumulated in the ratio of 35 tons to 10 tons of flue slags. The accumulated carbonaceous matter in some fume and flue dusts only requires a 5 per cent addition of coal slack for reduction, but as the lead peroxide contents vary appreciably, this figure has to be altered to suit. The lead sulphate reacts with the lead sulphide of the galena, forming lead in the usual manner, while the peroxide and fume oxides are directly reduced, and a final addition of 5 to 8 per cent scrap iron usually completes the reduction.

A USEFUL OXIDIZING AGENT

Depending on the amount of sulphur present, and how far the iron has reacted, from 6 to 10 per cent leady matte is produced, and from 50 to 60 per cent lead, which is passed to the lead softening furnaces and from thence to the refining kettles. Although this system gives the most rapid return of lead contents, it by-passes the use of an extremely useful oxidizing agent in lead peroxide which, in the blast furnace, can materially assist the picking-up of silver during reduction from refractory argentiferous residues, where the lead has to be recovered in any case. Collected brasses from radiators and other sources pass directly to the converter where they enrich the matte in copper, while most of the zinc passes to the collectors.

Most of these brasses are of either 70/30, or 60/40 composition, and the zinc incidentally assists throwing out lead from the matte in the converter, whereby it is exposed more directly to the blast and thereby oxidizes more rapidly but, of course, does not reduce it to the considerable extent possible with the specially designed matte refining converter, for handling rich leady mattes. Briefly, the advantages of this system of initially segregating scrap and adding it to the different stages of ore smelting are that full value is obtained for all contents of lead, tin, antimony, copper, and zinc, in record time without interfering with existing processes; however, it involves more labour than where they are all more or less dumped together in extensive furnace systems, and finally reclaimed by electrolytic refining.

Mining in Turkey in 1950

According to the Eti Bank, moderate increases were recorded in 1950 in the production of iron ore and, to a lesser degree, in the production of copper, manganese, antimony and sulphur, but Eti Bank chrome and salt monopoly production declined 14 and 3 per cent, respectively. The increase in copper and iron production is attributed partly to the utilization of new equipment and partly to increased efficiency in labour practices and improvements in management.

PROGRESS MADE WITH E.C.A. AID

Progress was made in the long-range investment programme in mining, chiefly financed through E.C.A. aid. Orders were placed, materials and equipment arrived in substantial quantities, and installations were generally on schedule. However, in most fields projects had not yet reached the stage of completion at which marked increases in production result from modernization and expansion. In most instances this stage will not be reached until 1952.

During 1950 the Turkish Ministry of Economy and Commerce revised its list of areas in which mineral exploration rights are reserved for the government-operated Institute of Mining Research and Exploration (M.T.A.) and numerous areas were opened for private exploration.

NEW MINING LAW UNDER CONSIDERATION

In February 1951, a meeting was held at the invitation of the Ministry of Economy and Commerce for the consideration of the enactment of a new mining law. Committees were appointed for the preparation of recommendations for the Minister of Economy and Commerce that would be used in drafting new legislation. The old law is considered out-of-date, too formal, insufficiently flexible, and poorly adapted for the encouragement of the investment of domestic and foreign capital in Turkish mining.

Details of the output of the main minerals found in Turkey, based on information given in the May, 1951, issue of *Mineral Trade Notes* of the U.S. Bureau of Mines, appear below. An article on "Mining Development in

Turkey" appeared in *The Mining Journal* on March 22, 1951.

Production of saleable chromite by the Eti Bank mines of Guleman, Sori, and Palu totalled 158,342 tonnes, a decrease of 8 per cent from the 172,689 tonnes produced in 1949. Transport difficulties, the insolvency of Canskcili Bros., who normally produce 40,000 tonnes annually, and lack of interest of foreign buyers in January and February, 1950 contributed to the reduction in output.

The Turkish Government request for E.C.A. funds with which to purchase pipe lines, pumps, and power lines to provide enough water for the new gravity concentration plant at Guleman, was approved. When these are installed, the plant will operate at an annual capacity of 35,000 to 40,000 tonnes of 48 to 52 per cent concentrates.

During the year, the E.C.A. issued procurement authorizations for mining equipment for Bilgen & Co., whose application for $34,000 was approved at the end of 1949. The company expects to increase production from 10,000 tonnes of refractory ore and 6,000 tonnes of metallurgical ore to 18,000 tonnes of refractory ore and 15,000 to 20,000 tonnes of metallurgical ore when the necessary equipment is received.

E.C.A. ASSISTANCE SOUGHT FOR PURCHASE OF GERMAN EQUIPMENT

E.C.A. considered an application of the Turk Maadin Co., which has a mine in Mugla, south of Izmir, for £T1,000,000 to finance the purchase of foreign exchange for an aerial tramway and other equipment to be ordered in Germany to improve the transport facilities between the mine and the nearest port. Orhan Brandt, another private producer, applied in July for E.C.A. credit for $54,231 for the purchase of mining equipment, compressors, and trucks. No action had been taken on these applications at the end of 1950.

The Mining Research and Exploration Institute made plans to survey the chromite deposits in southwestern Turkey south of Mugla.

Exports of chromite during 1950, and 1949, by destination, are given in the following table (in tonnes):

	1949	*1950*
Austria	37,324	29,233
Belgium	390	—
Canada	—	6,696
France	17,676	10,729
Germany (Western)	8,196	8,743
Greece	—	1,016
Hungary	3,452	58
Italy	5,750	3,702
Norway	500	12,900
Sweden	16,280	23,128
Switzerland	50	—
United Kingdom	11,017	16,556
United States	252,610	241,415
	353,245	354,176

No final estimates for 1950 production of manganese ore are available, but it is believed that production ranged from 15,000 to 20,000 tonnes. Exports of manganese ore increased 143 per cent in 1950, and details of their destination are given in the following table (figures in tonnes):

	1949	*1950*
Czechoslovakia	5,942	6,477
Italy	500	—
Poland	—	3,035
United States	1,000	6,509
Yugoslavia	196	2,525
	7,638	18,546

The Eti Bank and the Mining Research and Exploration Institute estimated manganese-ore reserves at 150,000 tonnes, containing 40 to 45 per cent manganese. Projected output for 1952-53 is 5,000 tonnes.

Representatives of several American companies surveyed the possibility of buying Turkish manganese and signing contracts for deliveries amounting to 15,000 tonnes. However, Turkish manganese was believed by observers not to warrant heavy investment. Mines now operating are small surface mines, and operations are primitive. Their present potential capacity is estimated at 15,000 to 20,000 tonnes (48 per cent ore); however, the potential of 40 per cent ore is considerably higher.

COPPER PRODUCTION AND EXPORTS

Production of blister copper in Turkey increased from 11,283 tonnes in 1949 to 11,700 tonnes in 1950. Operations at the concentrator at the Ergani mine, completed in April, 1950, did not reach capacity until the end of the year owing to miscellaneous technical difficulties. The concentrator is expected to increase production by 3,000 tonnes. Consideration was given to the possibility of using a second blast furnace, which has been kept as a spare. If this furnace is operated continuously, production can be increased from 18,000 to 20,000 tonnes a year.

The flotation and smelting plant at Murgul was completed early in the autumn and operations began in January, 1951, when technical supervisory personnel arrived from abroad. The plant is expected to produce 12,000 tonnes of copper annually. Exports of blister copper decreased from 7,230 tonnes in 1949 to 6,316 tonnes in 1950.

Details of the destination of exports of blister copper from Turkey, 1949-1950, appear below (in tonnes):

	1949	*1950*
Czechoslovakia	500	865
Egypt	200	—
France	—	300
Hungary	1,400	750
Poland	300	1,001
Sweden	630	—
Switzerland	—	400
United States	4,200	3,000
	7,230	6,316

The Eti Bank and the Mining Research and Exploration Institute estimated ore reserves as follows: Ergani, 170,000 tonnes, and Murgul, 200,000 tonnes. The projected output for 1952-53 is 26,000 tonnes, 14,000 of which will be from Ergani and 12,000 from Murgul. If the second smelter at Ergani is operated continuously, another 4,000 to 6,000 tonnes can be added to production.

LEAD AND ANTIMONY

The estimated output of lead concentrates in Turkey during 1950 was 650 tonnes. An E.C.A. consultant, studying the possibility of increasing lead output and building a small smelter in Turkey, indicated that lead could be produced profitably as long as present price levels are maintained.

Production of antimony ore in 1950 was 3,220 tonnes, almost double the 1,156 tonnes produced in 1949. It is understood that the Eti Bank is planning to sell its interests in the Turhal district to private operators who are working adjacent properties. The Eti Bank and the Mining Research and Exploration Institute estimated antimony (50 per cent) reserves at 40,000 tonnes. The projected output of antimony for 1952-53 is 5,000 tonnes. Exports of antimony (crudum 90 per cent and ore 50 per cent) increased in 1950, whereas exports of metal declined.

SULPHUR OUTPUT NEARLY DOUBLED

Eti Bank production of sulphur increased from 3,000 tonnes in 1949 to 5,800 tonnes in 1950. The Eti Bank studies during 1950 of beneficiation of Keciburlu sulphur showed encouraging results. Analysis of samples, submitted to American and European firms, were reported to indicate that current production costs could be cut approximately by half by the use of flotation. It is questionable, however, that even with this improved method, Turkish sulphur could compete with American sulphur.

E.C.A. assistance for the development of the Divrigi iron deposits amounted to approximately $1,000,000 up to the end of 1950. These credits were used to buy stripping equipment, trucks, conveyors, construction material, and other accessory mining machinery. By the end of 1950, virtually all of the equipment was at the mine.

Production of iron ore was limited by requirements of the Karabük Iron & Steel Works. The 1950 output was 220,847 tonnes, compared with 210,000 tonnes in 1949. After completion of E.C.A. developments, 300,000 to 400,000 tonnes of iron ore is expected to be produced from the Divrigi mine.

Surveying of the Camdag iron deposit near Adapazari continued in 1950. Surveys on the west of the Sakarya River were completed, and estimated reserves were placed at 10,000,000 tonnes. Surveying will continue in 1951 to the east of the River and it is hoped that final estimates of the entire field will be much greater. The iron content of this field is only 40 per cent, compared with 63 per cent at the Divrigi mine, but the nearness to Karabük (about 200 kilometres, compared with a rail distance of 1,000 kilometres between the Divrigi mine and Karabük) may make utilization of the lower-grade ore more economical than the Divrigi ore. Work was discontinued at Hekimhan near Malatya in spite of the high quality of the ore because of the distance of the field from Karabük. The Eti Bank and the Mining Research and Exploration Institute estimate ore reserves at Divrigi at 25,000,000 tonnes.

A Commonwealth Bank Merger

Two great banks formed about the time Queen Victoria came to the throne—The Bank of Australasia and The Union Bank of Australia Limited—which have both played an important part in the development of Australia and New Zealand through boom and depression, through drought and flood, to Dominion status and an important rôle in international affairs, have decided to join hands. On October 1, these two banks were merged into the Australia and New Zealand Bank Limited, which will have over 550 Offices and Branches in Australia, New Zealand and Fiji. To commemorate this event in the development of banking in the two Dominions, a beautifully illustrated book entitled "October First, 1951" has been published, containing brief histories of the two banks and facts and figures relating to the moment of their merging; in addition, it includes a short survey of the agriculture, industry and commerce of Australia and New Zealand.

THE BANK OF AUSTRALASIA

The Story of The Bank of Australasia traces the development of this bank, which opened its gates in Sydney in 1835. To show the enterprise, versatility and public spirit of its senior officers in its early years, reference is made to David Charteris McArthur, who opened the first bank in Melbourne in 1838 and eventually retired as a Director in 1876. He was one of the first Trustees of the Melbourne Botanical Gardens, took an active part in founding the Mechanics' Institute—now Athenæum—floated the first loan on behalf of the Corporation of Melbourne, helped to found the first Roads Board, played in the first cricket match in Victoria and later, was President of the Melbourne Cricket Club.

The "Hungry Forties," which had their reflection in the Antipodes (when the price of wool fell severely); the famous gold rush; the collapse, in 1893, of the speculation fever in land in and around Melbourne, and the subsequent gradual recovery as well as the problems brought about by two world wars—all these events in the history of Australia are mentioned in this sketch.

THE UNION BANK OF AUSTRALIA

The following chapter outlines briefly the history of The Union Bank of Australia, formed by a certain Philip Oakden, a banker of Launceston in Van Diemen's Land, who secured co-operation, in his plans, of George Fife Angas, an eminent London banker of that period. By 1839, The Union Bank of Australia had established offices at Sydney, Hobart, Launceston, Campbelltown and Melbourne, Port Phillip and, in 1840, it opened a branch at Britannia, Port Nicholson—the first bank in New Zealand. It is interesting to note that during the emergency five-day "bank holiday" declared by the Government of Victoria in the crisis of 1893, The Union Bank of Australia, like The Bank of Australasia, remained open—an action which greatly enhanced their reputation.

Between 1837 and 1900, the number of branches of the Union Bank increased to 104 and to 265 in the following 50 years. The growth in the first half of this century is a reflection, in part, of the increasing importance of Australia as an industrial country. Admittedly, this process was accelerated by two world wars, which necessitated the manufacture of supplies unobtainable from normal sources for the Dominions' fighting services and civilian population. After the war, they were left with modern plants and they have since been put to good use, not only for Australia, New Zealand and the Pacific Islands, but also for the large populations of South Eastern Asia which form important potential markets for the natural produce and manufactured goods of Australia and New Zealand.

The Directors of the two banks are of the opinion that the formation of a larger and even stronger bank, possessing highly organized international connections will create a financial organization particularly well equipped to meet future requirements of expanding trade and industry and provide still better banking services for their communities. The new bank will also provide more widespread facilities than either bank alone and, the existing policy of both banks in opening branches in growing areas will be capable of acceleration out of the combined resources of the new bank. Lastly, fuller technical services will be offered to customers.

MAINTAINING COMPETITION

The Directors are confident that this merger will leave competition in the banking world in Australia and New Zealand undiminished; the two banks have, in fact, developed on complementary lines and it is particularly fitting that they should be united in a single unit. The name of the new bank has been chosen as one directly related to the great territories which it will serve. Its authorized capital of £17,000,000 (£A.21,250,000) is to be divided into 8,500,000 shares of £2 each, credited as £1 paid.

The last section of this book bears the title "Lands of Opportunity" and gives a great wealth of information of interest also to the general reader about the agricultural and industrial development of the two Dominions.

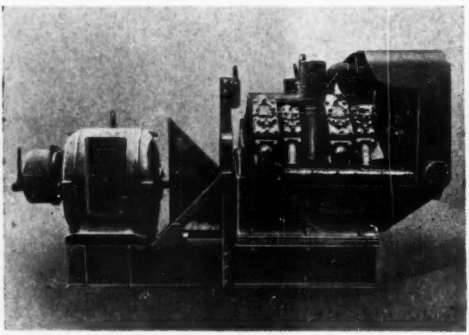
It emphasizes that the most pressing element of the present situation in Australia (and to a lesser extent New Zealand, too), is the need for more people to open up and operate mines, to till the soil, tend the flocks, run transport services, hydroelectric schemes and work in factories. It was with this need in mind that the chairmen of the two banks, when proposing the merger, said that the new bank, with its greater resources, would continue to foster the development of these two great territories and advise and assist its customers in their enterprises.

Machinery & Equipment

New Consolidated Pneumatic Air Compressor

The model 500-P-8 Compressor, the latest in the range of stationary machines, made by the Consolidated Pneumatic Tool Co., Ltd., 232, Dawes Road, London, S.W.6, is the natural development of the C.P. range of air-cooled stationary compressors. It has been produced to meet the requirements of civil engineers for larger capacity in a handy, compact unit, for work on hydro-electric schemes, dams, tunnels, etc., where large volumes of compressed air are required for fairly long periods. As such projects are generally sited in rough and undeveloped country, the small dimensions and light weight of this model are stated to be valuable assets.

The 500-P-8 Compressor is a two-stage, air-cooled machine, having eight cylinders in two banks in 90° V formation. This arrangement, in conjunction with the well-balanced, four-throw crankshaft, is claimed to give an extremely smooth torque curve and a very steady air flow, which combine to minimize vibration, and so obviate the necessity for heavy foundations.



The CP Model PB-8-500 Stationary Air Compressor

The machine is built on a strong, box-type crankcase, with a flat base, large access doors and detachable main-bearing housings. The stiff, forged-steel crankshaft is mounted in two babbitted split brass bearings at the rear and centre, and in two tapered roller bearings at the drive end. These latter locate the shaft in an end-wise direction and take the side pull of a belt drive or the thrust of a direct coupling. Two forged-steel connecting rods are fitted on each crankpin and these are connected to one high and one low pressure piston on opposite banks. The cylinders and heads are cast separately in blocks of two (one H.P. and one L.P.) and are well finned for efficient cooling. The cylinders are precision ground and honed to a mirror finish and the pistons are balanced and fitted with fully floating gudgeon pins. In the heads are fitted C.P. Simplate Valves, which consist of concentric discs operating over annular ports in a valve seat, against the tension of volute springs, the discs being guided at three points 120° apart. Because of its annular ports and straight, uniform lift, the Simplate Valve has, according to the makers, the greatest effective area for a given valve diameter, giving low air velocities and total valve clearance making possible low power consumption and high volumetric efficiency. The light weight valve discs are made from stainless steel, heat-treated, tempered and ground, and the valve seats and keepers are machined from steel forgings and are case-hardened. The valves are held in the heads by bolted covers and may be removed without breaking any manifold or head joint.

Lubrication is by force-feed throughout, a gear-type pump supplying oil under pressure to the main bearings, whence it passes through drilled ports in the crankshaft to the big ends and then through the centre of the connecting rods to the gudgeon pins. The cylinders and tapered roller bearings at the drive end of the shaft are lubricated by the oil mist thrown off by the rotating parts.

The air compressed in the first stage is passed through an efficient fan-cooled sectional intercooler before entering the second stage cylinders, so ensuring that the full economy in power, resulting from two-stage compression, is achieved.

The output of the compressor is controlled, in accordance with demand, by a three-step capacity regulator, which permits operation at full, half or zero capacity as required, thus minimizing the range and frequency of load and current variation.

This regulation is effected in the following manner. At a pre-determined maximum pressure, an unloader operates to admit air pressure above the diaphragms over the inlet valves in one bank of cylinders, holding these valves open and reducing the output by one half. If, then, the air output still exceeds the demand, causing a further rise in discharge pressure, a second unloader operates and holds open the inlet valves in the second bank of cylinders, thus reducing the output to zero. This method of unloading is described as giving cooler operation, and, therefore, lower power consumption, at partial loads, than any other system.

The compressor may be directly coupled to a six-pole, 50-cycle motor, in which case a multiple disc, spring loaded, flexible coupling is employed, or it may be belt-driven by a four-pole or six-pole motor, the compressor being fitted with a grooved belt wheel. Other types of prime mover may be also be fitted either by direct coupling or driving through belts.

Where no permanent compressor station is being set up and it may be necessary to move units from one part of the site to another, the manufacturers recommend that the compressor and motor be mounted on a steel sub-base, so that they may be moved without upsetting their alignment.

Ranier Excavators

We have just received an illustrated brochure from Ransomes & Ranier Ltd., Ipswich and 32, Victoria Street, London, S.W.1, giving full details of the firm's well-known excavators. It also lists shovels, dragshovels, skimmers and draglines in sizes from ¼ cu. yd. (0,190m³) bucket capacity upwards and states that grab crane and pile-driver equipments are available for some sizes of machines, particulars of which can be had on application.

The company claims to be the builders of Europe's largest excavators and shovels are listed up to 11 cu. yd. (8,500m³) and walking draglines up to 20 cu. yds. (15,3m³). Larger excavators are usually built to particular requirements.

Every excavator in the Ranier range is described as a big output machine, in which continuous performance and freedom from breakdown are assured by the amply proportioned machinery. Specially selected hard wearing materials, proved by experience to give the longest life to all wearing parts, are used throughout, while accessible layouts, wide platforms and grouped lubrication reduce maintenance costs to a minimum.

Universal Shearing Machine for Mechanized Anthracite Mining

Preliminary tests show that a compressed-air operated, universal shearing machine, imported by the U.S. Bureau of Mines from Germany for experiments, promises to be a useful tool for mechanized mining of steeply pitching anthracite beds, according to Report of Investigations 4794, "Anthracite Mechanical Mining Investigations—Progress Report 3: Preliminary Testing of the Korfmann Universal Shearing Machine, Model SK 20."

The Korfmann universal shearing machine is track mounted and of the conventional cutter bar and chain type. However, the cutting mechanism can be rotated to cut in any direction. The machine weighs about 1½ tons.

The tests reported were made in an anthractie mine, the operators of which are co-operating with the Bureau in its effort to develop a method of mechanical underground mining adapted to the Pennsylvania anthracite region, especially to speed up the development of gangways. The tests were conducted to determine the power characteristics of the machine and its manoeuvreability and effectiveness when used in anthracite mining. It was tested under various conditions, and power curves were developed. The authors of the report, John W. Buch and Andrew Allan, Jr., conclude that the machine would aid in increasing the rate of gangway driving, and that its performance warrants additional experiments using a definite mining method. They suggest some modifications, noting that a compressed-air operated crawler tractor mounting is being designed. This would increase its manoeuvrability, especially important in gangway work.

Comparison of this machine with the smaller, lower-powered Eickhoff shearing machine, which the Bureau also has tested, shows that the latter is more manoeuvreable, but will make only shear, *i.e.*, vertical cuts.

Acomb Switches for Belt Conveyors

With the introduction of belt conveyors for transporting coal underground the need arose for a reliable device to provide automatic control and belt protection, and the Acomb Governor Switch has been developed by E. N. Mackley & Co., Gateshead-on-Tyne, to meet this need. It is made in two types: (a) sequence control switch, and (b) belt protection switch.

The Acomb switch consists of a sensitive centrifugal governor arrangement operated by the driving spindle pulley in contact with the underside of the conveyor belt. The governor actuates a push rod which operates micro-switches in the contact box. These micro-switches are heavy duty type with snap action, silver contacts and housed in sealed, dustproof, moulded case. The mechanism is in cast housings of a light alloy of robust construction to withstand underground conditions.

The switch is mounted in a swivel bracket so that the weight of the switch box keeps the driving pulley in constant contact with the underside of the belt. No matter how the belt may lift or slide, contact is always maintained.

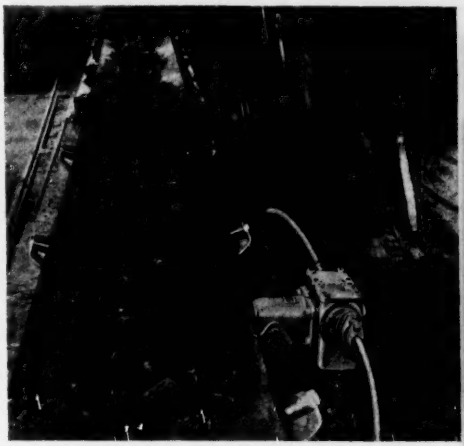
The Acomb switch was designed to enable mounting on the conveyor to be quickly and easily carried out, no special brackets, drives or guards being required.

The Acomb Sequence Control Switch is operated by the driving or outbye belt and controls the motor of the driven or inbye belt. Two or three micro-switches are fitted to suit the circuit. It is fitted with an adjustable time-lag to allow the starting current peak of the driving motor to subside before the driven motor is switched on. A small rotary selector switch in the side of the contact box provides three methods of control: (a) automatic sequence control; (b) hand control, and (c) hand sequence control. The latter gives manual control at the push buttons only when the driving belt is running, but the driven belt is automatically brought to rest when the driving belt is stopped. This method of control is suitable for face equipment.

The timer is of the Eddy current drag type and provides a delay up to 60 seconds. Where a number of conveyor motors are fed from one supply source, these timers can be adjusted to prevent overloading during starting.

The Acomb Belt Protection Switch is of a similar design, but without the timer. It is mounted on the conveyor requiring protection and stops the motor if: (a) protracted belt slip occurs at starting and the belt fails to attain 90 per cent of full speed; (b) belt slip occurs during running and the belt speed falls below 90 per cent of normal, and (c) the belt breaks.

This switch is set to operate at the belt speed specified and this setting ensures that, should the belt speed fall by any amount exceeding 10 per cent of the running speed, the switch will stop the motor.



The Flameproof Acomb Sequence Control Switch for Belt Conveyors

A ratchet pulley can be fitted instead of the standard solid type, on the sequence switch. This allows the switch to operate in one direction only, and prevents the auxiliary conveyor starting when rotation of the driving conveyor is reversed. By reversing this pulley on the driving spindle the opposite direction of rotation can be obtained.

Gandy Products

Gandy, Ltd., Wheatland Works, Wallasey, Cheshire, established as power transmission specialists for over 75 years, have recently published a revised edition of their "Gandy Belting Products" catalogue. Apart from the interesting introductory short history of the Gandy organization, formed by Maurice Gandy, a retired East Indiaman captain, this publication also shows its wide range of machinery belting both for transmission and conveyor purposes. Interesting notes on drive designing are also included in this catalogue.

The Klinger Book of Jointings

The latest technical brochure issued by Richard Klinger Ltd., Sidcup, Kent, gives full details of the well-known "Klingerit" jointings, including their behaviour under compression.

Metals, Minerals and Alloys

Interest in the past week has centred on various international conferences affecting the industrial metals, more particularly copper, zinc and tin, and while these are being digested, and their effects weighed, trade has been largely in suspense, and international trade is increasingly disorganized.

Copper.—Possibly the most important point to notice this week is the publication by the International Materials Conference of copper and zinc allocations for the fourth quarter of the year. The subject is noticed more at length in our "Notes and Comments" elsewhere in this issue. The acute shortage of metal in the United States, the development of which has been noted in recent weeks, has caused President Truman to authorize a release of a further 30,000 s.tons of copper from stockpile. This is in addition to the 25,000 s.tons announced on August 17. Reports of an intention to raise the domestic price of 24½c. continue to circulate. Of late, increasing stress has been laid in Washington on directing stockpiling efforts to the future rather than to immediate accumulation which is regarded as fully adequate. A number of deals by big mining concerns with the new D.M.P.A. have been announced mostly looking to stimulating production between 1953 and 1955. Copper Cities Mining Co. is scheduled for an annual production at the rate of 22,500 s.tons towards the end of 1954, North Butte to raise output to upwards of 3,500 s.tons, Phelps Dodge to increase output by 38,000 s.tons from the Copper Queen, with the Government agency providing a floor of some 22/23c. per lb.

The chairman of Kennecott told shareholders last week that the Company's operations had shown a remarkable increase with the settlement of the recent strikes. The settlement of the strike of the Mine, Mill and Smelter Union with the Phelps Dodge Corporation with an agreement on a new labour contract is announced. The Union's spokesman in Arizona said that the agreement was a good one and in line with the new Kennecott contract, so the injunction issued by President Truman appears to be producing satisfactory results.

The copper output of Northern Rhodesia in July fell to 22,557 tons compared with 28,676 tons in June.

Chilean interests are reported to be negotiating small sales of semi-processed copper with Spanish firms.

Lead. — Somewhat unexpectedly the Ministry of Materials has lowered the price of lead by £5 to £175 per ton. This is officially attributed to purchases which have made reduction possible, but may also be the outcome of recent Washington discussions bearing on price equalization between this country and the United States, where the domestic price has been raised to 19c. However, importers have refused to do business on this basis, as the prices would be far too low to allow them to continue trade, when Europe has been paying at least 21½c. for Mexican lead. They therefore propose to divert further imports to other countries offering better prices.

The Defence Production Administration and the N.P.A. has issued a statement to the effect that the demand for domestic primary lead is more than three times the supply and that 25,000 s.tons will be available for allocation as against applications for 97,000 s.tons. The N.P.A. has been authorized to distribute 6,000/7,000 s.tons from metal deliverable to stockpile. World production for the current year is estimated at some 1,860,000 s.tons approximately the same as in 1950.

Tin.—As in Paris in March, the Rome meeting of the International Tin Study Committee on tin prices and control ended in complete failure. The Indonesian and Congo interests declared their intention of invoking the G.A.T.T. provisions in the Havana Charter, in the event of the United States negotiating Bolivian sales at more than the current 112c. per lb. The Bolivian delegates, led by Senor Carlos Aramayo, are believed to be asking 150c. Meetings of the negotiators in Washington appear to have been sidetracked for some days this week. Incidentally, the Bolivian delegation asked for the suppression of the free market in London and the Straits.

Zinc.—A special point of interest this week has been the clash between United States importers of zinc and the Defence Mobiliser, Mr. Wilson, after his statement that the 19½c. ceiling to which the domestic price has been raised, will apply to imported zinc. Consumers at present can pay any price for imported zinc, provided that the price ceilings on end products are maintained. They pointed out that Europe has been paying at least 30c. for foreign zinc, and that as, in the case of lead, they would divert their supplies to higher paying countries. Importers have virtually withdrawn from the market pending developments. The U.K. price remains at £190 per ton, or an equivalent of 23⅜c. per lb.

Aluminium.—Strong opposition is expressed by aluminium producers in the North Western States to the proposals to shift aluminium potlines to other areas. Mr. Henry Kaiser has said that it would take seven months to shift one potline and that in the meantime production would be lost.

Quicksilver.—United States consumption of this metal declined heavily in the second quarter of the year compared with the first quarter and imports reflected this condition, being 8,065 flasks in the second quarter, against 12,805 flasks in the first. Imports from individual countries for the six months were Spain, 8,340 flasks; Yugoslavia, 3,875 and Italy, 2,224 flasks. The U.S. price continues to be firm and is now reported at $218/220 per flask.

Sulphur.—The U.S. Bureau of Mines has stated that sulphur production in recent months has not kept pace with the rapidly expanding world requirements, though prospects of overcoming the shortage within the next two years are favourable.

Titanium.—Mr. C. R. Cox, president of the Kennecott Corporation, stated last week that excellent progress was being made at the company's titanium plant in Canada. Slag was now being shipped from one furnace and three furnaces should be in operation by next year.

Tungsten.—The possibility of an increase in the Ministry of Materials wolfram quotation, hinted at in this column last week, does not appear to have matured. The basic selling price by the Ministry remains at 535s. per unit and the purchasing price at 525s., c.i.f. U.K. ports.

The International Materials Conference Tungsten-Molybdenum Committee has recommended a plan of distribution for tungsten and molybdenum for the current fourth quarter. The majority of the Committee has recommended the continuation of existing price arrangements for tungsten for a brief period while negotiations for a longer arrangement continue. The U.S. House of Representatives Ways and Means Committee has approved a Bill to suspend the import duty of $8 per ton on tungsten for a period of two years from the date of the enactment of such a measure till the end of the national emergency. The Bill provides for the reimposition of the tariff should the price fall below $63 per s.ton unit for more than a month.

A Reuter message from Rangoon this week says that the Karens have seized the wolfram stocks which have been accumulating at the Mawchi Mines since 1948. Criticism was directed in Parliament earlier in the year to the failure to get these supplies moved because of their liability to seizure by the rebels.

The London Metal Market

(From Our Metal Exchange Correspondent)

Activity on the London Metal Exchange has been at a higher level than of late, but price movements have been insignificant. The backwardation has been maintained at around £60 per ton in spite of increased stocks in official warehouses, a fair amount of prompt metal changed hands, but it is expected that the span will diminish in the near future. The communiqué issued at the end of the Rome Conference contained nothing of an unexpected nature and had no effect on prices.

The main interest this week has centred in other metals where first of all the allocations for copper and zinc for the last quarter of this year were published by the International Materials Conference, but it is not expected that this will have much effect and the question is being asked on all sides as to where a number of the countries are going to be able to buy what they have been allocated. It is considered in some quarters that the ensuing chase may push up still further prices being paid for those tonnages of the metals which are not dealt with by government and semi-government contracts.

On Tuesday night it was announced that the ceiling prices for lead and zinc had been raised by 2c. per lb. each, but that at the same time the new ceiling prices would also apply to imported material and it appears that this action will cut down the amount of metal which American manufacturers will be able to buy from overseas, as other countries are still paying in the neighbourhood of 22c. per lb. for lead and around the 30c. mark for zinc. At the time of writing the Ministry of Materials new prices have not been issued but the necessary adjustments cannot be long delayed.

On Thursday the official close on the tin market was: Settlement price £990, Cash Buyers £987 10s., Sellers £990; Three months' Buyers £927 10s., Sellers £930. In the afternoon the market was steady. Turnover for the day was 140 tons. Approximate turnover for the week was 1,090 tons.

The Eastern price on Thursday morning was equivalent to £934 17s. 6d. per ton, c.i.f. Europe.

Iron and Steel

Only last month Mr. Gaitskell was in Washington seeking substantial tonnages of U.S. steel. The Chancellor on that occasion placed our requirements as high as 800,000 tons. Now it transpires that, in the new Anglo-German trade agreement, there is a general undertaking that the Bonn Government will facilitate the delivery of German steel to this country to the end of the year.

These facts illustrate the dire straits to which the British steel industry has been reduced, and to emphasize the gravity of the situation, it is announced that Vauxhall Motors have laid off a considerable number of men at their Luton works "because of the worsening of sheet steel supplies." A spokesman of the Society of Motor Manufacturers and Traders places the maximum needs of this country at an additional 100,000 tons.

The position in other steel using industries is just as serious. There is a growing apprehension amongst ship builders, engineers and foundrymen concerning the extent of their supplies when the new allocation system comes into operation two months hence. The arms drive is imposing heavy and increasing calls on British steel capacity and although exports are being severely reduced, there is only a smaller tonnage of steel products available for home distribution.

Most of these difficulties stem from the shortage of raw materials. The supply of foreign ores is no longer deficient. Imports during the past three months have been on a spectacular scale, but coking coal, coke and scrap are still in short supply and this is preventing the full employment of blast furnace and steel capacity.

These problems are engaging attention and there is hope that in the near future it may be possible to increase pig iron production as the starting point for an expansion of steel output. No less urgent is the need for more pig iron for the foundries, few of which are at present receiving their full allocations.

Shortages of billets, and to a lesser degree, of slabs and sheet bars also, have become a matter of grave concern to the re-rolling industry. Happily, the intake of imported steel semis has improved, but the deficiencies in deliveries of home produced material still continue.

For all descriptions of rolled steel products there is an overwhelming home and overseas demand, but most of the works have more orders in hand than they can possibly complete before the rationing system comes into operation on December 3rd and it is assumed that on that date uncompleted orders will be cancelled, unless new authorizations are obtained.

OCTOBER 4 PRICES

COPPER

Electrolytic	£227 0 0 d/d
Fire refined, high conductivity	£227 0 0 d/d
Fire refined, high grade	£226 10 0 d/d
Fire refined, ordinary quality + 99.7%	£226 0 0 d/d
Fire refined, ordinary quality + 99.2%	£225 10 0 d/d

TIN

(See Metal Notes above for Thursday's Metal Exchange prices)

LEAD

Soft foreign, duty paid	£175 0 0 d/d
Soft empire, including secondary lead	£175 0 0 d/d
English lead	£176 10 0 d/d

ZINC

G.O.B. spelter, foreign, duty paid	£190 0 0 d/d
G.O.B. spelter, domestic	£190 0 0 d/d
Prime Western	£190 0 0 d/d
Electrolytic and refined zinc	£194 0 0 d/d
Zinc (99.99% Zn)	£196 0 0 d/d
Sheets	£210 10 0 ex works
Zinc oxide (red seal)	£205 0 0 d/d
Zinc oxide (green seal)	£206 10 0 d/d
Zinc oxide (white seal)	£207 10 0 d/d

OTHER METALS

Aluminium, £124 per ton.
Bismuth, 28s. lb.
Cadmium, 18s. 9d. lb.
Chromium, 5s. 11d. lb.
Cobalt, 17s. 6d. lb.
Gold, 248s. f.oz.
Iridium, £65 oz. nom.
Magnesium, 1s. 6d. - 2s. lb. according to quantity.
Osmiridium, £35 oz. nom.
Osmium, £70 oz. nom.
Palladium, £8 10s. oz.
Platinum (scrap), £27.
Platinum, £27/£33 5s. nom.
Rhodium, £45 oz.
Ruthenium, £30 oz.
Quicksilver, £73 10s./£74 ex-warehouse.
Selenium, 25s. nom. per lb.
Silver (bar), 78¼d. f.oz. spot and forward.
Tellurium, 19s. lb.

ORES, ALLOYS, ETC.

Bismuth	50% 16s. lb. c.i.f. 40% 14s. 9d. lb. c.i.f.
Chrome Ore—	
Rhodesian Metallurgical (lumpy)	£13 per ton c.i.f.
,, ,, (concentrates)	£13 per ton c.i.f.
,, ,, Refractory	£12 12s. per ton c.i.f.
Baluchistan Metallurgical	£13 18s. 6d. per ton c.i.f.
Magnesite, ground calcined	£26 - £27 d/d
Magnesite, Raw	£10 - £11 d/d
Manganese, Best Indian	(Nominal)
Molybdenite (85% basis)	103s. 1¼d. per unit c.i.f.
Wolfram (65%), U.K.	525s. nom. c.i.f.
Tungsten Metal Powder (for steel manufacture)	35s. nom. per lb. (home)
Ferro-tungsten	33s. nom. per lb. (home)
Carbide, 4-cwt. lots	£30 3s. 9d. d/d per ton
Ferro-manganese, home	£39 17s. 1d. per ton
Ferro-manganese, export	Nom.
Brass Wire	2s. 7¼d. per lb. basis.
Brass Tubes, solid drawn	2s. 1d. per lb. basis.

The Mining Markets

(By Our Stock Exchange Correspondent)

Conditions generally remained steady and firm this week with an increased volume of turnover. The all round tone was surprisingly good although large alterations in prices are unlikely during the period of uncertainty preceding the general election.

The official announcement of a change of policy by the I.M.F. over sales of gold at premium prices has so far had little effect on gold shares. In brief, the I.M.F. now leaves the decision on premium sale policy to be made by the individual member countries. At the time of writing no official statement of such policy has yet been made by any country, but announcements are expected very shortly. One reason for hesitation by investors is undoubtedly the extreme difficulty of assessing the probable effect of this move. The price of gold on the "free" markets of the world, at first firm following the news, tended to fall away later in the week. Taking the longer view, it seems probable that a greater volume of gold will reach the open market and that in time this is likely considerably to reduce existing premiums.

Kaffirs issues were mainly easier. For some time most Rand mines have been deriving great benefit from premium prices, and any reduction would certainly affect their working profits. On the other hand, the September returns hold out some hope that the recent flattening trend of production costs may continue. While many mines still show increases in production costs, others record welcome reductions, and where this has been the case it has had a noticeable effect on profit figures. The decline in Simmer & Jack Mines working profit from £34,848 to £22,330 is attributed to a pressure burst near the Central Tertiary shaft area during the month. Doornfontein fell another 1s. 3d. in dull conditions, thus cutting out the bonus element in the new issue terms.

Orange Free State shares turned dull and Geoffries and Middle Wits recorded considerable falls. This was caused by disappointment over the result of the W.N.5 borehole results, although market expectations from this drill had never run very high. The figures were as follows: 5,944 ft. pebble reef 3.6 dwt. over 69 inches, equivalent to 248 in.-dwt.; 6,787 ft. Basal reef 1.9 dwt. over 12 inches, equivalent to 22.8 in. dwt. West Africans were a more active section than for a long time past. While jobbers report that the general public are still holding aloof, there was a welcome increase in turnover, and Ashantis gained the turn despite the fact that they went ex dividend when dealings began for the new account on Wednesday. The biggest relative increase was in Konongo and Lyndhurst. Continued rumours of good development results at the former mine, presumably on the Boabedroo section, were the cause of this.

Activity in Nigerian tin shares, following the improved price of the metal, tended to die away towards the end of the week and earlier gains were in many instances cancelled out. Eastern tin issues generally failed to respond. Kamuntings estimated profit before taxation jumped to £874,000 against £340,171 last year. The Directors are paying a second interim dividend of 12½ per cent making 25 per cent for the year. This is the same as for 1949/50 and the board intimated that in their opinion the figures would warrant a higher distribution. They are therefore deferring consideration of a final payment until the situation regarding dividend control becomes clearer.

In a subdued lead/zinc market North Broken Hill were outstanding. The Directors have declared a final dividend of 70 per cent making the total distribution for the year 170 per cent against 120 per cent last year. This exceeded market expectations and the shares jumped 2s. 3d.

FINANCE	Price Oct. 3	+or− on week
African & European	3	+⅛
Anglo American Corpn.	8⅛	−⅛
Anglo-French	21/10½	
Anglo Transvaal Consol.	38/9	
Camp Bird	13/4½	−1d
Central Mining (£1 shrs.)	46/6	+3d
Consolidated Goldfields	51/10½	+1/10½
Consol. Mines Selection	33/9	−1/3
East Rand Consols	4/6	
General Mining	6⅛	−⅛
H.E. Prop.	36/3	
Henderson's Transvaal	11/-	
Johnnies	3⅜	−⅛
Rand Mines	6⅛	
Rand Selection	43/1½	−7½d
Union Corporation	10⅜	−⅛
Vereeniging Estates	5⅜	
Writs	30/7½	−7½d
West Wits	45/-	−1/10½
RAND GOLD		
Blyvoors	51/-	−6d
Brakpan	20/-	−7½d
City Deep	2⅛	−⅛
Consol. Main Reef	2½	−⅛
Crown	4⅛	
Daggas	3½	+⅛
Dominion Reefs	1/7½	−1½d
Doornfontein	25/-	−1/3
Durban Deep	3⅜	
E. Daggas ... (4/- units)	26/10½	
E. Geduld	53/9	
E. Rand Props	4⅛	−⅛
Geduld	7⅜	−⅛
Grootvlei	37/6	−6d
Libanon	16/3	−3d
Luipaards Vlei	22/3	
Marievale	21/9	+3d
Modderfontein B	5/-	
Modderfontein East	37/6	
New Kleinfontein	32/6	
New Pioneer	21/3	−1/3
Randfontein	18/9	
Robinson Deep	14/6	−3d
Rose Deep	36/3	+7½d
Simmer & Jack	6/9	−1½d
Springs	9/10½	
Sub Nigel	3⅛	
Van Dyk	15/-	−3d
Venterspost	28/9	
Vlakfontein	18/9	
Vogelstruisbult	28/3	+3d
West Driefontein	6⅜	−⅛
W. Rand Consolidated	45/-	+7½d
Western Reefs	41/10½	+1½d

O.F.S.	Price Oct. 3	+or− on week
Alpha F.S.A.	11/3	
Blinkpoort	22/6	
Central Mining F.S.	5/-	
Freddies	12/-	−3d
Freddies N.	11/-	−3d
Freddies S.	12/9	−3d
F.S. Geduld	3⅜	−⅛
Geoffries	28/9	−1/6
Harmony	24/6	+3d
Lydenburg Estates	10/6	−9d
Middle Wits	24/-	−1/-
Ofsits	46/3	−1/10½
Prefont Brand	21/9	−6d
President Steyn	18/-	−3d
St. Helena	28/9	−3d
U.F.S.C. & G.	8/9	−3d
Virginia Deb.	76	+2
Virginia Ord.	13/-	−6d
Welkom	36/10½	−1/3
Western Holdings	3⅛	−⅛
WEST AFRICAN GOLD		
Amalgamated Banket	2/1½	
Ariston	7/1½	
Ashanti	29/9xd	+3d
Bibiani	10/-xd	
Bremang	3/1½	
G.C. Main Reef	3/6	
G.C. Selection Trust	8/10½	+1½d
Konongo	3/1½	+7½d
Kwahu	4/6	+3d
London & African Mng.	2/7½	+4½d
Lyndhurst Deep	1/7½	+4½d
Marlu	2/3	
Nanwa	6d	
Taquah & Abosso	7/3	
AUSTRALIAN GOLD		
Boulder Perseverance	3/-xd	−1½d
Gold Mines of Kalgoorlie	15/-	−1½d
Great Boulder Prop.	7/3	+6d
Great Western Consol.	2/9	
Lake View and Star	21/4½	
Mount Morgan	18/4½	+1½d
North Kalgurli	18/-	−3d
Paringa	10½d	+½d
Sons of Gwalia	11/-	
South Kalgurli	8/6	
Western Mining	7/9	
Wiluna	12/-	−3d
MISCELLANEOUS GOLD		
Cam and Motor	33/9xd	−7½d
Champion Reef	10/6	−6d
Falcon Mines	10/3	−1½d
Globe & Phoenix	23/9	−3d

MISCELLANEOUS GOLD (contd)	Price Oct. 3	+or− on week
G.F. Rhodesian	8/9	−3d
London & Rhodesian	5/7½	
Motapa	2/9	
Mysore	6/-	−1½d
New Guinea	1/9	−3d
Nundydroog	7/3	
Ooregum	3/3	−⅛
Oroville	14/1½	−3d
St. John d'El Rey	41/-	+1/-
Zams	39/9	+3d
DIAMONDS		
Anglo American Inv.	4⅜	+⅛
Casts	41/-	−6d
Cons. Diam. of S.W.A.	4⅜	
De Beers Defd. Bearer	70/9	+9d
De Beers Pfd. Bearer	16⅛	−⅛
COPPER		
Chartered	71/1½	−2/10½
Indian Copper	4/3	
Messina	6½	
Nchanga	7⅜	+⅛
Rhod. Anglo-American	66/3	+1/3
Rhodesian Selection	21/-xd	−3d
Rhokana	23½	+⅛
Rio Tinto	22⅞	+⅛
Roan Antelope	13/1½xd	
Selection Trust	51/3	+7½d
Tanks	54/6	+2/3
Tharsis Sulphur Br.	52/6	
TIN (Eastern)		
Anglo-Burma	2/9	
Ayer Hitam	28/3	
Bangrin	33/-	−9d
Gopeng	15/6	
Hongkong	11/-	
Ipoh	31/-	+4½d
Kamunting	13/-xd	−3d
Kepong Dredging	13/9	
Kinta Tin Mines	16/9	
Kramat Pulai	4/3	
Malayan Dredging	23/9	−6d
Pahang	16/7½	
Pengkalen	11/3	−3d
Petaling	13/10½	−1½d
Rambutan	17/6	
Siamese Tin	22/9	−4½d
Southern Kinta	14/-	−7½d
S. Malayan	28/6	−1/-
S. Tronoh	25/6	−3d
Sungei Kinta	18/9	
Tekka Taiping	9/-	−3d
Tronoh	30/-	

TIN (Nigerian and Miscellaneous)	Price Oct. 3	+or− on week
Amalgamated Tin	10/10½	−1½d
Beralt Tin	25/-	−6d
Bisichi	3/10½	−1½d
British Tin Inv.	18/3	+4½d
Ex-Lands Nigeria	7/3	
Geevor Tin	15/10½	+1½d
Gold & Base Metal	4/6	+9d
Jantar Nigeria	7/4½	
Jos Tin Area	11/1½	+1½d
Kaduna Prospectors	4/-	
Kaduna Syndicate	6/3	
London Tin	6/6	+3d
Ribon Valley	1/4½	+3d
United Tin	3/6	+3d
SILVER, LEAD, ZINC		
Broken Hill South	59/6	
Burma Corporation	3/7½	
Consol. Zinc	34/9	−1/-
Lake George	26/3	−1/6
Mining Trust	7/9	
Mount Isa	49/6	
New Broken Hill	28/6	−1/3
North Broken Hill	81/3	+1/3
Rhodesian Broken Hill	22/3	−3d
San Francisco Mines	36/3	−6d
Trepca	4/-	−1½d
MISCELLANEOUS		
BASE METALS & COAL		
Amal. Collieries of S.A.	60/-	
Associated Manganese	71/3	+1/3
Chinese Engineering	3/-	
C.P. Manganese	48/9	−2/9
Natal Navigation	5⅛	−⅛
Wankie	23/9	+3d
Witbank Colliery	3⅜	
CANADIAN MINES		
Dome	$35	+3
Hudson Bay Mining	$117	+2
International Nickel	$82⅜	+3⅛
Mining Corpn. of Canada	£6⅛	+⅛
Noranda	$154	+4
Quemont	£9⅛	+⅛
OIL		
Anglo-Iranian	5⅛	−⅛
Apex	50/-	−7½d
Attock	24/4½	
Burmah	61/10½	−1/10½
Canadian Eagle Bearer	36/7½	−3d
Mexican Eagle	27/-	+3d
Shell	4⅜	
Trinidad Leasehold	32/3	−3d
T.P.D.	37/6xd	−7½d
Ultramar	32/9	−3d

Inco's Good Progress

Simultaneous completion of two projects by The International Nickel Co. of Canada — a new shaft and a new concentrator at its Creighton Mine—involving total expenditures of $17,000,000 was announced recently by R. Leslie Beattie, Vice-President and General Manager of Canadian Operations.

The new shaft brings to 13 the number of operating shafts in International Nickel's underground mines in the Sudbury District. The mill, which concentrates ore before transportation to the smelter at Copper Cliff, has a capacity of 10,000 tons of ore a day. The additional underground ores will serve as a replacement of open pit ores and will enable the company to continue refined nickel production capacity at the present rate of about 250,000,000 lb. per year. When designed in 1948, the mill was to have had a daily capacity of 6,000 tons, but plans were changed two weeks after the outbreak of hostilities in Korea to accommodate the additional tonnage.

The company's programme has already involved capital expenditure of more than $100,000,000. When the programme is completed in 1953, the company's underground mines will be able to deliver 13,000,000 tons of ore annually, compared with 5,700,000 tons of underground ore hoisted in 1950.

CONSTRUCTION PROBLEMS

The problem of mining ores from the lower grade sections at Creighton was complicated by the fact that higher grade ores had previously been removed from the areas below the lower grade ores, according to Mr. Beattie. Old mine openings interfered with an orderly arrangement of openings for the new programme. This, and many other problems, were solved by using scale models and embodying the factors anticipated in underground mining. Extensive laboratory, pilot plant and operational scale test work preceded designing in 1948 of the new Creighton concentrator. With the near doubling of capacity long after construction had started, plans and construction procedures had to be revised without interfering with building in progress and yet put the plant in operation ahead of schedule in the face of material shortages.

The new shaft, called Creighton No. 7, has been sunk in one of the oldest operating mines of International Nickel. Geological studies of the Creighton ore body in 1856 foreshadowed its later discovery in 1885; and the first shipment of ore from Creighton to the smelter in Copper Cliff was made 50 years ago in August, 1901.

Designed for ore hoisting only, the No. 7 shaft has been sunk to an initial depth of 2,050 ft. It is 8½ ft. by 24 ft. in cross section and is concrete-lined throughout.

Serving No. 7 shaft is a 14 ft. by 110 in. parallel double-drum geared hoist. The skips have a capacity of 15 tons each, and the hoisting capacity is 700 tons per hour.

CREIGHTON CONCENTRATOR

The new 10,000 ton concentrator at Creighton is a remarkably compact, streamlined plant with many unusual features of design and operation. It is built at the site of No. 7 shaft; the head frame and hoist house are integral parts of the mill building, and ore from the mine is hoisted directly into the crushing plant. Part of the mill feed is non-magnetic ore brought by conveyor from another Creighton shaft two-thirds of a mile distant. The crushing plant has a simple straight-line flow sheet with no circulating loads. The grinding mills are among the largest in the world. The plant's water supply is obtained through a six mile pipeline from the Vermilion River, and the product, a bulk concentrate, is pumped through another line 7½ miles to Inco's reduction plants at Copper Cliff.

Company News & Views

The I.M.F. Retreats

The promised statement of the International Monetary Fund on the outcome of the September meeting in Washington bears out the impression left by Mr. Holloway's statement noted in our last week's issue. The Directors have discovered that the situation in producing and consuming countries varies so widely that it is impracticable to expect uniform measures by all members to achieve the objectives of the previous gold statement of 1947. Consequently, it leaves the decision of how the end is to be attained to the judgment of the individual member States. This should put an end to the current practice of allowing "processed," "fabricated" or "industrial" gold to be sold at premium prices—a practice which, where the wishes of the I.M.F. have not been openly ignored as in France and Switzerland, has been adopted even in the United States.

Gold viewed as a commodity is grossly undervalued at $35 per f.oz., but it does not follow that it is going shortly to rise to the $50, $60 or $100 claimed to be its true price in the Western U.S. mining circles. The demand for premium gold has come from quarters desirous of insuring against depreciating fiat currencies and has been in proportion to scarcities of supply. When these become easier the price quietly recedes. With gold again freely saleable premiums should largely disappear. It may be that we shall see something like a world price established at some figure above $35 but this would only represent the beginning of a price readjustment of gold to all other commodities and is essential if we are gradually to see gold recover its function as a barometer of the world's trade for which an accepted valuation is necessary.

Kamunting Tin's Impressive Expansion

The directors of Kamunting Tin Dredging state that they are satisfied that the company's profits for the year ending March 31, 1951 would warrant a distribution in excess of 25 per cent. In these circumstances the directors have declared a second interim dividend of 12½ per cent, payable on October 25, which brings the total distribution for the year to 25 per cent—the same as that paid last year. As announced in our issue of September 28, it is the directors' intention to defer final consideration of the accounts and the possible recommendation of a final dividend until later in the year, when the position regarding dividend limitation should be clearer.

Estimated profit for the year, before taxation, advanced to the impressive figure of £874,000, an increase of £533,829 over the preceding year, and be it noted, this total was struck after providing £110,000 (£131,500) for depreciation and depletion. The steep rise in profits, however, is estimated to attract much higher tax, £516,000 against £210,000. Other estimated appropriations to be made include amounts written off restoration expenditure of £24,000 (£26,000), and British Government securities of £10,000 (nil); of transferring £34,500 (£12,889) to contingencies reserve and £100,000 (nil) to reserve for transfer of dredges; and after taking into account the payment of £89,684 (£91,953) required to service the dividend, it is estimated that approximately £100,000 would still be available out of the year's profits.

On this basis the directors would be prepared, if permitted, when they consider the final accounts, to recommend a final dividend of 15 per cent which would absorb £52,664 and an additional profits tax thereon of £21,000. This would leave, with the balance brought in, approximately £87,000 to be carried forward against £60,666 in the preceding year.

Company Shorts

Broken Hill South.—At an extraordinary meeting to be held after the ordinary meeting at Melbourne, Australia, on October 26, a special resolution will be submitted to shareholders to provide for the conversion of the company's shares into stock transferable in units of 5s.

Sons of Gwalia—July Output.—In our issue of September 21 last, under "July Mine Returns" the monthly output figure for Sons of Gwalia was unfortunately omitted. During the period June 19-July 17, Sons of Gwalia produced 6,010 tons gold yielding 1,067 oz.

Paringa Mining & Exploration—A Correction.—In our issue of September 21 last under "July Mine Returns," the Paringa Mining & Exploration Co. was erroneously listed among current Australian gold producers. In fact, Paringa suspended milling operations on January 16 last (as reported in *The Mining Journal* of February 2 and March 2).

San Francisco Mines of Mexico has announced that a cable has been received from the mine stating that, together with other users of electric power in the neighbourhood, the mine has been ordered to cut its power consumption by 25 per cent. As a result, the mill will have to be closed down two days a week and other mines in the area are adopting the same policy on a staggered basis. The rate of milling will be adversely affected until the power shortage is over.

Kalgoorlie Electric Power & Lighting.—According to a cable received by the company from Australia, it has been announced that the Western Australian Electricity Commission has increased the price to power consumers, as defined in a concession agreement, by 0.125d. per unit as from June 1.

The company states that it is hoped that the letter which is referred to in the cable will be received before the annual meeting called for Wednesday next, thereby enabling the chairman to refer to this matter at that meeting.

Anglo-French to Increase Capital to £1,000,000.—Anglo-French Exploration Co. have called an extraordinary general meeting on October 19 to consider a resolution to increase the capital of the company from £750,000 to £1,000,000 by the creation of £250,000 new £1 shares, 50,000 of which will be offered to shareholders at par.

As the amount involved in the proposed issue is limited to £50,000 and therefore treasury consent will not be required. The directors state in a circular that the dividend to be declared for the calendar year 1951 will be maintained at the rate of 7½ per cent on the capital as increased by the proposed issue. Application forms in connection with the offer will be posted on or about October 19.

"Tanks" Special 10 Per Cent Dividend.—Until the position with regard to dividend limitation has been clarified, the board of Tanganyika Concessions has decided to pay a special ordinary dividend of 10 per cent, less U.K. income tax, in respect of the year to July 31, 1951. Payment will be made on November 16 and will be appropriated from the amount of revenue reserves appearing in the balance sheet at July 31, 1950, of £1,2124,116 thus absorbing £210,149 of this balance. A circular from the company giving this information also stated that it was the intention of the board to pay any further ordinary dividend out of current profits.

The board believe that at present the maximum dividend allowed, in the event of the White Paper proposals becoming law, would be in the region of 10¾ per cent. Had it not been for the Chancellor's announcement to limit dividends, the board would have been prepared to recommend a total of 25 per cent.

Pahang Consolidated Protests Against Dividend Limitation.—The Pahang Consolidated Company has addressed the Chancellor of the Exchequer submitting its case for exemption if it is ultimately decided to introduce legislation to implement the White Paper proposals in regard to Dividend Limitation. The company's mine is the largest lode tin producer in the British Empire and the biggest employer of labour in the State of Pahang in Malaya.

The property was overrun by the Japanese in December 1941 when, in accordance with Government's instructions on withdrawing the staff effectively damaged the valuable and expensive plant and pumps, and the mine, comprising over 250 miles of underground workings, was consequently flooded and rendered useless to the Japanese.

The successful dewatering of the mine and the general rehabilitation to date, underground and on surface, of this Company's extensive property has been a tremendous and costly task and no dividends were paid between January 1942 and December 1949.

Topical News in Brief

World Bank to Send Mission to Southern Rhodesia.—At the request of the Prime Minister of Southern Rhodesia, Sir Godfrey Huggins, the International Bank for Reconstruction and Development, plans to send a mission to examine the possibilities of the Bank lending money for the development of the Colony.

Mexican Steel Production.—Official figures show that Mexican steel production in the first six months of this year amounted to 159,500 tons; and increased production schedules have been laid down for the next six months. Steel production in 1950 was 285,738 tons. The improved figures for the first six months of this year are due to the expansion at the Altos Hornos de Mexico foundry, and Monterrey Iron & Steel Mills.

The recent discovery of rich iron deposits in the State of Oaxaca and along the Pacific coast, says Reuter, give promises of still bigger production.

British Sulphur Corporation.—A limited company, British Sulphur Corporation, has now been registered with a nominal capital under the auspices of the Sulphur Exploration Syndicate. The Syndicate is composed of the chief consumers of sulphur in the U.K. and includes Imperial Chemical Industries, Fisons and Monsanto Chemicals.

Its object is the systematic exploration of sources of sulphur all over the world which might eventually be exploited for the benefit of this country and international trade. The purpose of this new company is to provide a vehicle for the exploitation, if required, of properties considered of interest by the Syndicate. Members of the Syndicate will not necessarily participate financially in the activities of the company and the amount of finance required and its source are matters on which no decision has been taken.

Britain to Have New Large Coking Plant.—A new coke oven and by-product plant—to be known as the Avenue coking plant—is to be erected by the National Coal Board at Wingerworth, near Chesterfield, at an estimated cost of about £8,000,000. It will consist of 106 ovens, which will be capable of carbonizing 750,000 tons of coal a year, and produce 500,000 tons of coke as well as large quantities of town gas. It is hoped to complete this plant in about four and a half years.

In addition to coal blending facilities and the primary by-product plant associated with modern carbonization practice, the Avenue plant will have a benzole rectifying plant, tar distilling plant, gas purifying equipment and a sulphuric acid plant. About 3,000,000 gallons of crude benzole and 6,000,000 gallons of crude tar will be produced annually. Not only British experience, but also the latest features of American and German developments, which are applicable to carbonization practice in this country, have been incorporated in the design.

The Woodall-Duckham Co., London, is to undertake the greater part of the construction work, and the main order placed with it amounts to £4,750,000. This is the largest single contract placed by the N.C.B. since the nationalization of the industry in 1947.

U.S. Coal Allocation Plan.—An allocation and licensing programme for U.S. exports of anthracite and bituminous coal will come into effect on November 1, according to a joint statement, issued by the U.S. Department of Commerce and the Economic Co-operation Administration, which stated that the co-ordination of U.S. coal exports was made necessary to assure that the essential needs of other free nations are met, despite an inadequate number of ships available and congested port facilities brought about by extremely heavy demands for U.S. coal. In fact, U.S. coal exports are currently running at the rate of 3,300,000 tons per month.

The programme will effect maximum utilization of port facilities at Hampton Roads, Virginia, and equitable distribution among importing countries of the coal moving through that port. Severe congestion of port facilities and inefficient use of ships at Hampton Roads have resulted from concentration of foreign demands on coal shipments through that port.

Under the new programme, a quota will be allocated to each country for coal shipments through Hampton Roads, while the balance of each country's allocation can then be obtained through other U.S. ports. The new allocation system is expected to reduce long waiting periods at Hampton Roads and thus increase the use of ships for coal exports.

E.C.A. allocations for Western Europe will be determined on a quarterly basis with the advice and assistance of the O.E.E.C. The initial allocation will cover the two-months period to January 1, 1952, and allocations will be increased as more cargo space becomes available.

Coke, already under export controls, will be included in the allocation system. Canada will be exempted under the programme.

KINTA KELLAS TIN DREDGING

The Twenty-Fourth Annual General Meeting of Kinta Kellas Tin Dredging Co., Ltd., was held at Adelaide House, London Bridge, E.C.4, on Friday, September 28.

Mr. P. J. Burgess (Chairman) presided.

The following is an extract from the Statement by the Chairman issued with the report and accounts for the year ended March 1 last:

The financial results of the past year's working of our Company are satisfactory, but good as they are they could have been better had less of the total running time been taken up in manoeuvring the dredge which was working on the southern boundary of the property where straight runs were not possible without permanently wasting payable ground. Furthermore, the dredge was skirting areas which were unprofitable despite the high prices for tin.

Portions of the tin bearing areas of the Kinta Kellas Rubber Company's property over which we have mining rights, are outlying and have been sub-leased on tribute of which we take a proportion. Revenue from these tributors, increased last year from £249 to £3,540, as set out in the Profit and Loss Account.

The total profit made was £50,695, of which taxation takes approximately 70 per cent, or £35,000. After providing for the interim dividend of 10 per cent and the final of 15 per cent we carry forward to next year's accounts £10,269 which is £1,950 more than we brought in.

There is so much political talk and activity in this country just now in connection with profits and dividends paid that I think it as well to draw attention to our case and the fact that the issued capital of the Company on which dividends are paid does not by any means represent the full capital invested in the business.

The Balance Sheet shows assets in four groups totalling £232,452. Against these there are liabilities of £80,665, but we have not taken into account our agreed War Damage claim of £47,224, of which the first instalment of 60 per cent was paid in May this year. We may now say that our Balance Sheet assets represent almost £200,000 effective capital as against the issued capital of £105,000.

The real value at the present day of the fixed assets in the Balance Sheet, and of the dredge in particular, are very much more than the figure as set out. That figure is based on the first cost of the dredge of £67,590 and subsequently written down year by year from profits to the present day nominal figure of £9,567. Considering that it has been well and fully maintained from the start of dredging in August, 1928, and thoroughly put into order after the Japanese occupation its present day value is very little short of its replacement value and it would cost at least £200,000 to replace it.

Similar conditions apply to the other items of buildings, plant and equipment which have a replacement value much in advance of the figures shown in the Balance Sheet. In effect we are working on a capital of some £400,000 invested in the business whereas the dividend rate is perforce on the issued capital of £105,000. The 25 per cent on the issued capital corresponds to 6¼ per cent only on the total invested. This point is of major importance when a political issue is made of profits being excessive.

Your Board would have liked to install a second dredge on the considerable reserve lands under its control, but present day costs combined with penal taxation are prohibitive, while the amount of profit we can legally retain is quite insufficient to provide the inducement to risk more capital on additional equipment.

Further deterrents arise from the heavy duty to be paid on all tin produced, excessive costs of running the dredge and political insecurity. It is of interest to record that the tin duty for the first six months of this year in Malaya has brought £5,000,000 to the coffers of the Malayan Federation as a tax on production itself and not on profits. It is time that the duty on tin which bears very severely on lower grade ore mining should be revised.

The price of tin during the year 1950 rose rapidly and reached a peak in February of this year, then declining rapidly on cessation of stock piling purchased by the U.S.A. in March, 1951, accompanied by considerable anti-producer propaganda activity, which has been severely criticized as being inaccurate and unjustified. The present day price of £825 a ton for metallic tin is a critical one approaching production cost for low-grade producers and it will have a depressing effect on production. We are fortunate in having reserves which will keep our dredge fully occupied for many years ahead but as I have already pointed out the position is not one which justifies taking steps to accelerate production by incurring the very heavy capital expenditure which expansion would involve.

The condition of emergency in Malaya is still acute and our mining operations are carried on under the constant threat of terrorist action which is rampant in the Kinta district.

The Report and Accounts were adopted.

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ORDINARY DIVIDEND No. 30

NOTICE IS HEREBY GIVEN that Dividend No. 30 of 20 per cent, equal to 2s. per share has been declared as an interim dividend in respect of the year ending December 31, 1951, payable to shareholders registered in the books of the Corporation at the close of business on October 12, 1951, and to persons presenting Coupon No. 32 from Share Warrants to Bearer.

The dividend is declared in the currency of the Union of South Africa and becomes due on October 13, 1951. Warrants will be posted from the Head and London Offices on or about November 15, 1951.

The dividend is payable subject to the usual conditions which can be inspected at the Head and London Offices of the Corporation.

The Transfer Books and Register of Members will be closed from October 13 to October 19, 1951, both days inclusive.

Holders of Share Warrants to Bearer are notified that the dividend is payable at Barclays Bank (Dominion, Colonial & Overseas), Circus Place, London Wall, E.C.2, or at the Banque de l'Union Parisienne, 6 and 8, Boulevard Haussmann, Paris, on or about November 16, 1951. Coupons must be left four clear days for examination.

The effective rate of Non-Resident Shareholder's Tax is 6.9 per cent.

By Order of the Board,

London Office: W. E. GROVES,
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September 28th, 1951.

Mining Men and Matters

Mr. E. C. Baring has been appointed a director and a London agent of Anglo American Corporation of South Africa, and a director of Consolidated Mines Selection and East Daggafontein Mines.

Mr. Israel Hayman has joined the board of New Union Goldfields.

Mr. J. M. F. Phillimore has been appointed as an alternate director to Mr. H. F. Oppenheimer of Rhodesia Copper Refineries, Rhodesia Broken Hill Development, Rhokana Corporation, Nchanga Consolidated Copper and Rhodesian Anglo American.

The North of England Institute of Mining & Mechanical Engineers will hold a general meeting in the lecture theatre of the Institute, Newcastle-upon-Tyne, at 2.30 p.m. on Saturday, October 6, when a paper entitled "Bradford Shaft Disturbance" will be delivered by Messrs. E. L. J. Potts and W. J. W. Bourne. There will also be further discussion on the interim report "Control of Combined Mines" which was read at the general meeting held on August 11 last.

Business Items

Mr. L. G. Bowring has been appointed manager, Lombard Street Office of the Westminster Bank in succession to Mr. H. A. Maggs, who has retired after 40 years service.

Mr. H. C. Greenlees has been appointed chairman of the Cape local board of Barclays Bank (D.C. & O.) in succession to Mr. R. B. Edwards who has retired. **Mr. S. M. Pechey** has been appointed chairman of the Rhodesian local board in succession to Mr. O. Gordon who has also retired.

Viscount Portal of Hungerford has been appointed a director of British Aluminium.

Metropolitan-Vickers Electrical Co. has announced the appointment of **Mr. C. T. Scarf** as chief engineer, industrial control department in succession to Mr. G. L. Newman who has been transferred for special duties to the staff of the chief electrical engineer. **Mr. G. D. Harradine** has been appointed assistant sales manager, industrial control department.

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